AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A device for remotely decoupling coupled objects underwater comprising:

an uninsulated replaceable fusible link with an electrical resistance sufficient to cause heating and breaking of the uninsulated replaceable fusible link underwater;

a means for supplying a high-power electrical charge across the uninsulated replaceable fusible link sufficient to heat and break the uninsulated replaceable fusible link underwater;

a means, held by the uninsulated replaceable fusible link, for holding and releasing a secondary link between the coupled objects and for providing mechanical advantage to the strength of the uninsulated replaceable fusible link; and

a command-signal delivery means that enables remote activation of the device.

2. (Currently Amended) The device of claim 1, wherein the uninsulated replaceable fusible link includes a length of nickel chromium wire attached to electrical terminals.

3. (Original) The device of claim 1, wherein the means for supplying the high-power electrical charge includes at least one capacitor with very low impedance.

4. (Original) The device of claim 1, wherein the means for supplying the high-power electrical charge includes:

a battery to charge at least one capacitor;

a capacitor charge control circuit electrically connected to the at least one capacitor;

an actuator switch to complete a circuit that includes the battery and the capacitor charge control circuit; and

a control signal input to the actuator switch from a command-signal delivery system.

5. (Original) The device of claim 1, wherein the means for holding and releasing is a hinged lever.

6. (Original) The device of claim 1, wherein the command-signal delivery means includes a system for transmitting and receiving acoustic signals for remote activation of the device underwater.

7. (Original) The device of claim 1, wherein the means for holding is made of non-corrosive materials.

8. (Original) The device of claim 1, wherein the means for holding is made of low-friction materials.

9. (Original) The device of claim 1, wherein the means for holding is made of one of delrin plastic, PVC plastic, noryl plastic, nylon, titanium and stainless steel.

10. (Original) The device of claim 1, wherein the means for holding minimizes friction areas to minimize friction.

11. (Original) The device of claim 1, wherein the means for holding has loose tolerances between moving parts to prevent failure due to environmental degradation.

12. (Currently Amended) The device of claim 1, wherein one of the coupled objects is a floatation object wherein the buoyancy of the floatation object allows reliable decoupling of the coupled objects and reduces stress on the uninsulated replaceable fusible link.

13. (Currently Amended) The device of claim 1, further comprising a plurality of uninsulated replaceable fusible links and a plurality of means for holding and releasing a secondary link, wherein the means for supplying a high-power electrical charge is coupled to all of uninsulated replaceable fusible links.

14. (Currently Amended) A method of remotely decoupling couple objects underwater comprising:

storing a charge;

restraining a lever arm with an uninsulated replaceable fusible link;

linking a secondary link to the lever arm;

activating a switch to release the stored charge across the uninsulated replaceable fusible link to break the uninsulated replaceable fusible link underwater, wherein the stored charge is sufficient and is delivered at sufficient power to break the uninsulated replaceable fusible link.

15. (Original) The method of claim 14, wherein the charge is stored on a low resistance capacitor.

16. (Original) The method of claim 15, wherein a battery supplies the charge stored on the low resistance capacitor.

17. (Original) The method of claim 14, wherein activating a switch further comprises sending a signal command to a command signal delivery system to activate the switch.

18. (Original) The method of claim 17, wherein the signal command is an acoustic signal.

19. (Original) The method of claim 14, wherein the lever arm is made of non-corrosive materials.

20. (Original) The method of claim 14, wherein the lever arm is made of low friction materials.